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Elon Ray Coats

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EXAMINER

PAUL, DISLER

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/810,754	<b>Applicant(s)</b> COATS, ELON RAY	
	<b>Examiner</b> Disler Paul	<b>Art Unit</b> 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                               | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                      | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.
2. Claim 14-15,17-18 is rejected under 35 U.S.C. 102(e) as being anticipated by Martin et al. (US 7,171,010 B2).

Re claim 14, the apparatus for adjusting a tonal quality of an audio signal (fig.4), comprising: means for producing a first intermediate signal containing a band of frequencies at a lower mid-range of the audio signal (fig.5 (310)); means for producing a second intermediate signal containing a band of frequencies at an upper mid-range of the audio signal (fig.5 (40)); means for combining the first intermediate signal, the second intermediate signal and the audio signal to produce a tonally adjusted version of the audio signal

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(fig.5 (320)); and means for adjusting respective gains of the first and second intermediate signals to affect the tonal quality of the audio signal without substantially altering the tonal quality of the audio signal at frequencies between the lower mid-range and the upper mid-range (fig.5 (312)/help in producing improved dynamic bass boost of sound and boosting bass frequency range).

Re claim 15 has been analyzed and rejected with respect to claim 14.

Re claim 17, the apparatus of claim 15, wherein at least one of: the tonally adjusted audio signal is characterized at least in part by frequency spectral energy of the audio signal being reduced by frequency spectral energy of the first intermediate signal as a function of the adjusted gain of the first intermediate signal; and the tonally adjusted audio signal is characterized at least in part by frequency spectral energy of the audio signal being increased by frequency spectral energy of the second intermediate signal as a function of the adjusted gain of the second intermediate signal (fig.1; col.5 line 50-56; fig.5 (312,310,40); col.6 line 52-55/ bass frequency band of the audio spectrum may be amplified).

Re claim 18, the apparatus of claim 1, wherein the lower mid-range band of frequencies is between about 150 to 600 Hz (fig.5 (310); col.5 line 60-62).

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1,5-6,8,13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al. (US 7,171,010 B2) and Richter (3,293,364).

Re claim 1, Martin et al. disclosed of an apparatus for adjusting a tonal quality of an audio signal (fig.3-5; col.1 line 65/controlling bass audio frequency), comprising: a first audio filter operable to produce a first intermediate signal containing a band of frequencies at a lower mid-range of the audio signal (fig.5/(310); col.5 line 60-65; col.6 line 40-45); a second audio filter operable to produce a second intermediate signal containing a band of frequencies at an upper mid-range of the audio signal (fig.5(40);col.4 line 50-51; col.3 line 54-57/wt control signal); a mixing circuit operable to combine

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the first intermediate signal, the second intermediate signal and the audio signal to produce a tonally adjusted version of the audio signal (fig.5 (320); col.6 line 47-51); and the adjustable control operable to adjust respective gains of the first and second intermediate signals to affect the tonal quality of the audio signal without substantially altering the tonal quality of the audio signal at frequencies between the lower mid-range and the upper mid-range (fig.5(312); col.6 line 52-57/bass frequency adjusted for producing good bass frequency sound quality).

While, Martin et al. disclose of the above with the automatic tonal adjustment, However, Martin et al. fail to disclose of the user adjustable control to adjust the gain of the signal. But, Richter et al. disclose of potentiometer system wherein further provided with the user adjustable control to adjust the gain of the signal (fig.1 (15-17); col.3 line 20-40) for the purpose of maintaining dynamic range and tonal balance of original sound under the control of the user. Thus, taking the combined teaching of Martin et al. and Richter as a whole, it would have been obvious for one of the ordinary skill in the art to have incorporate the user adjustable control to adjust the gain of the signal for the purpose of for the purpose of maintaining dynamic range and tonal balance of original sound under the control of the user.

Re claim 5, the apparatus of claim 1, wherein at least one of:  
the tonally adjusted audio signal is characterized at least in part by  
frequency spectral energy of the audio signal being reduced by  
frequency spectral energy of the first intermediate signal as a  
function of the adjusted gain of the first intermediate signal; and  
the tonally adjusted audio signal is characterized at least in part by  
frequency spectral energy of the audio signal being increased by  
frequency spectral energy of the second intermediate signal as a  
function of the adjusted gain of the second intermediate signal  
(fig.1; col.5 line 50-56; fig.5 (312,310,40); col.6 line 52-55/ bass  
frequency band of the audio spectrum may be amplified).

Re claim 6, the apparatus of claim 1, wherein the lower mid-range  
band of frequencies is between about 150 to 600 Hz (fig.5 (310); col.5  
line 60-62).

Re claim 8, Martin et al. disclose of an apparatus for adjusting  
a tonal quality of an audio signal (fig.1,5), comprising: an amplifier  
circuit operable to receive the audio signal and to produce a tonally  
adjusted version of the audio signal(fig.5); a first audio filter  
disposed in a forward path between the audio signal and the amplifier  
circuit and operable to produce a feed forward signal containing a  
band of frequencies at a lower mid-range of the audio signal  
(fig.5/(310); col.5 line 60-65; col.6 line 40-45); a second audio

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filter disposed in a feedback path around the amplifier circuit and operable to produce a feedback signal containing a band of frequencies at an upper mid-range of the audio signal (fig.5(40); col.4 line 50-51; col.3 line 54-57); and an adjustable control operable to adjust respective gains of the feed forward and feedback signals to affect the tonal quality of the audio signal without substantially altering the tonal quality of the audio signal at frequencies between the lower mid-range and the upper mid-range (fig.5(312); col.6 line 52-57/bass frequency adjusted).

While, Martin et al. disclose of the above with the automatic tonal adjustment, However, Martin et al. fail to disclose of the user adjustable control to adjust the gain of the signal. But, Richter et al. disclose of potentiometer system wherein further provided with the user adjustable control to adjust the gain of the signal (fig.1 (15-17); col.3 line 20-40) for the purpose of maintaining dynamic range and tonal balance of original sound under the control of the user. Thus, taking the combined teaching of Martin et al. and Richter as a whole, it would have been obvious for one of the ordinary skill in the art to have incorporate the user adjustable control to adjust the gain of the signal for the purpose of for the purpose of maintaining dynamic range and tonal balance of original sound under the control of the user.



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Re claim 13 has been analyzed and rejected with respect to claim

1.

3. Claims 2,9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al. (US 7,171,010 B2) and Richter (3,293,364) and further in view of Waller, Jr. et al. (5,596,646).

RE claim 2, the combined teaching of Martin et al. and Richter as a whole, teach of the apparatus of claim 1, However, they fail to teach of the specific wherein the user adjustable control is a single potentiometer. But, Waller Jr. et al. disclose a system wherein the user adjustable control is a single potentiometer (fig.1 (R2)) for the purpose of providing a simplify circuit for obtaining the desired saturation effect as associated in analog tape simulator. Thus, taking the combined teaching of Martin et al. and Richter and now Waller Jr. et al. as a whole, it would have been obvious for one of the ordinary skill in the art to have incorporated the having a single potentiometer for the purpose of providing a simplify circuit for obtaining the desired saturation effect as associated in analog tape simulator.

The combined teaching of Martin et al. and Richter and now Waller Jr. et al. as a whole, would have further incorporate the feature of having the operable to sweep from a first extreme position

to a second extreme position in order to adjust the respective gains of the first and second intermediate signals (fig.1,5 wt (310,40,312) for control and input signals).

Re claim 9, the apparatus of claim 8, wherein: the user adjustable control is a single potentiometer operable to sweep from a first extreme position associated with a first input terminal to a second extreme position associated with a second input terminal through a variable intermediate position associated with an output terminal (see claim 2 rejection).

The combined teaching of of Martin et al. and Richter and now Waller Jr. et al. as a whole, would have incorporate the feed forward signal is coupled to the first input terminal of the potentiometer, the feedback signal is coupled to the second input terminal of the potentiometer, and the output terminal of the potentiometer is coupled to an input of the amplifier circuit (fig.5 wt (310,30,320)) and user actuation of the potentiometer effects adjustment of the respective gains of the feed forward and feedback signals in order to affect the tonal quality of the audio signal (fig.5 (312); dynamic bass boosting).

4. Claims 16,21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al. (US 7,171,010 B2) and further in view of knorr et al. (US 6,970,571 B2).

Re claim 16, the method of claim 15, However, Martin et al. fail to disclose of the adjusting either of the respective gains of the first and second intermediate signals without adjusting the other of the respective gains of the first and second intermediate signals. However, knorr et al. disclose of a sound enhancement system wherein the similar concept of the adjustment in either of the respective gains of the first or second intermediate signals without adjusting the other respective gain signals (col.4 line 35-41; fig.2 (46,22a,22b,62); col.4 line 5-10) for the purpose of selectively adjusting the magnitude sound for providing the desired transfer function for apparatus enhancement. Thus, taking the combined teaching of Martin et al. and knorr et al. as a whole, it would have been obvious for one of the ordinary skill in the art to have incorporated the adjustment of either of the respective gains of the first or second intermediate signals without adjusting the other respective gain signals for the purpose of selectively adjusting the magnitude sound for providing the desired transfer function for apparatus enhancement.

Re claim 21, Martin et al. disclose of the method of adjusting a tonal quality of an audio signal(fig.4-5), comprising: producing a first intermediate signal containing a band of frequencies at a lower mid-range of the audio signal and producing a second intermediate signal containing a band of frequencies at an upper mid-range of the audio

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signal; combining the first intermediate signal (fig.5 (310,30,320)), the second intermediate signal and the audio signal to produce a tonally adjusted version of the audio signal (fig.5 (312));. However, Martin et al. fail to disclose of the adjusting either of the respective gains of the first and second intermediate signals without adjusting the other of the respective gains of the first and second intermediate signals to affect the tonal quality of the audio signal. However, knorr et al. disclose of a sound enhancement system wherein the similar concept of the adjustment in either of the respective gains of the first or second intermediate signals without adjusting the other respective gain signals for tonal quality (col.4 line 35-41; fig.2 (46,22a,22b,62); col.4 line 5-10) for the purpose of selectively adjusting the magnitude sound for providing the desired transfer function for apparatus enhancement. Thus, taking the combined teaching of Martin et al. and knorr et al. as a whole, it would have been obvious for one of the ordinary skill in the art to have incorporated the adjustment of either of the respective gains of the first or second intermediate signals without adjusting the other respective gain signals for tonal quality for the purpose of selectively adjusting the magnitude sound for providing the desired transfer function for apparatus enhancement.

5. Claim 4,10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al. (US 7,171,010 B2) and Richter (3,293,364) and further in view of knorr et al. (US 6,970,571 B2).

Re claim 4, the apparatus of claim 1 with the mixing circuit and the user adjustable control, However, the combined teaching of Martin et al. and Richter and Knorr et al. as a whole, fail to disclose of the limitation of the adjustment of either of the respective gains of the first or second intermediate signals without adjusting the other respective gains of the first and second signals. However, knorr et al. disclose of a sound enhancement system wherein the similar concept of the adjustment in either of the respective gains of the first or second intermediate signals without adjusting the other respective gain signals (col.4 line 35-41; fig.2 (46,22a,22b,62); col.4 line 5-10) for the purpose of selectively adjusting the magnitude sound for providing the desired transfer function for apparatus enhancement. Thus, taking the combined teaching of Martin et al. and Richter and knorr et al. as a whole, it would have been obvious for one of the ordinary skill in the art to have incorporated the adjustment of either of the respective gains of the first or second intermediate signals without adjusting the other respective gain signals for the purpose of selectively adjusting the magnitude sound for providing the desired transfer function for apparatus enhancement.

Re claim 10 has been analyzed and rejected with respect to claim

4.

Re claim 11, the apparatus of claim 10, The combined teaching of Martin et al. and Richter and now Waller Jr. et al. as a whole, would have incorporate the wherein the single potentiometer includes a fixed intermediate position associated with a third input terminal and the third input terminal is coupled to a null potential (fig.4 (210 and at (200)) such that: (i) variable intermediate positions between the fixed intermediate position and the first extreme position permits adjustment of the first intermediate signal without permitting adjustment of the second intermediate signal; and (ii) variable intermediate positions between the fixed intermediate position and the second extreme position permits adjustment of the second intermediate signal without permitting adjustment of the first intermediate signal (see claim 4 rejection).

6. Claims 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al. (US 7,171,010 B2) and Richter (3,293,364) and further in view of Waller, Jr. et al. (5,596,646) and further in view of knorr et al. (US 6,970,571 B2).

Re claim 3, the apparatus of claim 2 with the adjustment of the single potentiometer effect the signals level of the control signals and input filter signal (fig.5 (310,control signals (30))), However, the combined teaching of Martin et al. and Richter and now Waller Jr.

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et al. as a whole, fail to disclose of the specific wherein the adjustment of the single potentiometer effects an adjustment in either of the respective gains of the first or second intermediate signals without adjusting the other of the respective gains of the first or second intermediate signals. However, knorr et al. disclose of a sound enhancement system wherein the similar concept of the adjustment of the potentiometer effects an adjustment in either of the respective gains of the first or second intermediate signals without adjusting the other respective gain signals (col.4 line 35-41; fig.2 (46,22a,22b,62); col.4 line 5-10) for the purpose of selectively adjusting the magnitude sound for providing the desired transfer function for apparatus enhancement. Thus, taking the combined teaching of Martin et al. and Richter and now Waller Jr. et al. and knorr et al. as a whole, it would have been obvious for one of the ordinary skill in the art to have incorporated the adjustment of the single potentiometer effects an adjustment in either of the respective gains of the first or second intermediate signals without adjusting the other respective gain signals for the purpose of selectively adjusting the magnitude sound for providing the desired transfer function for apparatus enhancement.

7. Claim 7,12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al. (US 7,171,010 B2) and Richter (3,293,364) and further in view of Official Notice.

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Re claim 7, the apparatus of claim 1, wherein the upper mid-range band of frequencies is up to 2200Hz (fig.5 (40); col.4 line 50-51), However, the combined teaching of Martin et al. and Richter as a whole, fail to disclose of the specific wherein the frequency is in the rang of either between about 2750 to 6000 Hz or between about 3000 to 6000 Hz; or between about 3000 to 5000 Hz; or between about 4000 to 5000 Hz; and (v) about 4000 Hz. But, official notice is taken the limitation of designing a filter wherein the frequency is around a desired ranged is commonly known in the art, thus it would have been obvious for one of the ordinary skill in the art to have incorporate the specific wherein the frequency is in the rang of either between about 2750 to 6000 Hz or between about 3000 to 6000 Hz; or between about 3000 to 5000 Hz; or between about 4000 to 5000 Hz; and (v) about 4000 Hz for the purpose of boosting signals at such bass range level for controlling the quality factor of control signal. .

Re claim 12 has been analyzed and rejected with respect to claims 6-7 as a whole. .

8. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al. (US 7,171,010 B2) and further in view of Official Notice.



Re claim 19, the apparatus of claim 15, wherein the upper mid-range band of frequencies is up to 2200Hz (fig.5 (40); col.4 line 50-51), However, Martin et al. fail to disclose of the specific wherein the frequency is in the rang of either between about 2750 to 6000 Hz or between about 3000 to 6000 Hz; or between about 3000 to 5000 Hz; or between about 4000 to 5000 Hz; and (v) about 4000 Hz. But, official notice is taken the limitation of designing a filter wherein the frequency is around a desired ranged is commonly known in the art, thus it would have been obvious for one of the ordinary skill in the art to have incorporate the specific wherein the frequency is in the rang of either between about 2750 to 6000 Hz or between about 3000 to 6000 Hz; or between about 3000 to 5000 Hz; or between about 4000 to 5000 Hz; and (v) about 4000 Hz for the purpose of boosting signals at such bass range level for controlling the quality factor of control signal.

9. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al. (US 7,171,010 B2) and further in view of Waller, Jr. et al. (5,596,646).

Re claim 20, the method of claim 15, However Martin et al. fail to disclose of the providing a single potentiometer to permit user adjustment of the respective gains of the first and second intermediate signals control to adjust the gain of the signal. But,

But, Waller Jr. et al. disclose a system wherein the similar concept of having a user adjustable control being a single potentiometer to adjust gain signal (fig.1 (R2)) for the purpose of providing a simplify circuit for obtaining the desired saturation effect as associated in analog tape simulator. Thus, taking the combined teaching of Martin et al. and Waller Jr. et al. as a whole, it would have been obvious for one of the ordinary skill in the art to have incorporated the having a single potentiometer for the purpose of providing a simplify circuit for obtaining the desired saturation effect as associated in analog tape simulator.

### **Contact**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Disler Paul whose telephone number is 571-270-1187. The examiner can normally be reached on 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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